

**Genome integrity: linking pluripotency and tumorigenicity.**

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**Authors:** Wenbin Deng, Yang Xu

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**Funding Grants:** Mechanisms to maintain the self-renewal and genetic stability of human embryonic stem cells

**Public Summary:**

**Scientific Abstract:**

Genome integrity is a fundamental issue in both cancer and stem cell biology. A series of recent studies revealed that a tumor suppressor p53, which is required for genome integrity, is critical also for stem cell pluripotency and reprogramming, further strengthening the fundamental link between cancer and pluripotency. p53 and other tumor suppressors might be barriers to reprogramming somatic cells for the generation of induced pluripotent stem cells (iPSCs), and simultaneously and systematically destroying these barriers would improve reprogramming efficiency. Therefore, it is also crucial to determine the tumorigenicity of the cells derived from iPSCs for any future therapeutic use.

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